P-W

ASHURST OIL CO. #1 Graham Co.
NE/NE Sec 30-T5S-R24E

5-2

5-2

County Graham

Area Eden

Lease No. _____

Well Name Ashurst Oil Company #1

Location ~~NW~~ SW NE Sec 30 Twp 5S Range 24E Footage 2525 fnl 1710 fel

Elev ____ Gr ____ KB | Spud Date 1928? | Complete Abandon 1928? | Total Depth 1247

Contractor: _____ Approx. Cost $_____

Drilled by Rotary ___
Cable Tool ___

Casing Size	Depth	Cement
10"		

Production Horizon _____

Initial Production D & A

REMARKS: Very probable that this well is the same as Gila Oil Syndicate #1 - File No. 5-3

Elec. Logs _____

Sample Log ___
Sample Descript X
Sample Set ___
Cores ___

Applic to Plub ___ Plugging Record ___ Completion Report ___

Water well - accepted by _____

Bond Co. & No. _____

Bond Am't $_____ Cancelled ___ Date Organization Report _____

Filing Receipt _____ dated _____ Well Book ___ Plat Book ___

Loc. Plat _____ Dedication _____

API # 02-009-05004

PERMIT NO. None Date Issued _____

5-2

PLUGGING RECORD

Operator: Gila Oil Syndicate		Address & Phone number: Defunct	
Federal, State, or Indian Lease No. or lessor's name if fee lease: Bellman Family Trust	Well No.: 1	Field & Reservoir: Wildcat well - Safford Basin	
Location of Well: SW, NE, sec 30, T. 5 S., R. 24 E.		Sec - Twp - Rge	County: Graham
Application to drill this well was filed in name of: N/A	Has this well ever produced oil or gas: NO	Character of well at completion (initial production): Oil (bbls/day) 0	Gas (MCF/day) 0 — Dry? Yes
Date plugged: 12/19/00	Total depth: 2645	Amount well producing when plugged: Oil (bbls/day) 0	Gas (MCF/day) 0 — Water (bbls/day) ~ 818

Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of plugging	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used. Indicate zones squeeze cemented, giving amount of cement
			0-550' cement
			550 - 1800 cement
			1800 - 2400 cement
			(2400 - 2645 debris)

CASING RECORD

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, etc.)	Packers and shoes
24- inch	(?)	(?)			⇦ *(Original Ashusrt well)*
10- inch	1247	1247			⇦ *(Original Ashusrt well)*
16-inch	550	10	540	Perforated	

Was well filled with heavy drilling mud, according to regulations? No - filled with cement only

Indicate deepest formation containing fresh water

NAME AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

Use reverse side for additional detail. *See reverse*

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Contracts Manager of the Lang Exploratory Drilling (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date: Aug 12, 2001

Signature: Randall Hoyt

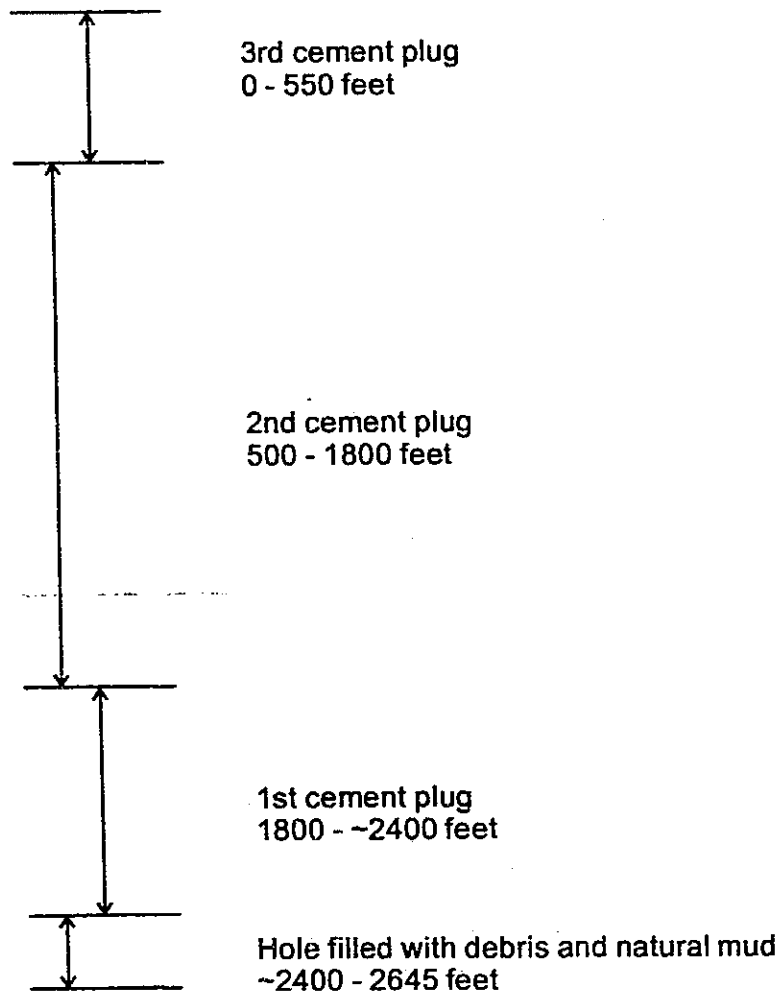
Permit No. 5-2 & 5-3

Mail completed form to:
Oil and Gas Program Administrator
Arizona Geological Survey
416 W. Congress, #100
Tucson, AZ 85701

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Plugging Record
File One Copy
Form No. 10

2/96

PLUGGING SCHEMATIC



APPLICATION TO PLUG AND ABANDON

FIELD Safford Basin

OPERATOR Gila Oil Syndicate ADDRESS & PHONE Defunct

LEASE NUMBER (Lessor's name if fee) Bellman Family Trust WELL NO. 1

LOCATION SW NE sec 30, T. 5 S., R. 24 E.

OGCC files 5-2 & 5-3

TYPE OF WELL Dry TOTAL DEPTH 2645

(Oil, Gas, or Dry)

ALLOWABLE (If Assigned) NA

LAST PRODUCTION TEST OIL NA (Bbls.) WATER 10,000/day (Bbls.)

GAS _____ (MCF) DATE OF TEST 1928 (?)

PRODUCING HORIZON NA PRODUCING FROM _____ TO _____

1. COMPLETE CASING RECORD:

24" conductor casing to unknown depth

10" to 1247 feet

no record below 1247 feet

2. FULL DETAILS OF PROPOSED PLAN OF WORK:

Details of work plan will be developed as inspection of the well progresses.

Actual conditions of the well are unknown.

See attached Work Plan for expected methods and procedures.

DATE COMMENCING OPERATIONS October 1, 2000

NAME OF PERSON DOING WORK Lang Exploratory Drilling ADDRESS 2286 West 1500 South, Salt Lake City, UT 84104

Signature Randy Maye

Title Contracts Manager

Address 2745 California Ave, Salt Lake City, UT 84104

Date Sept. 20, 2000

Mail two copies of completed form to:
Oil and Gas Program Administrator
Arizona Geological Survey
416 W. Congress #100
Tucson, AZ 85701

Date Approved 10-16-00

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By SC Rauzi

Permit No. _____

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Plug and Abandon
File Two copies
Form No. 9

2/96

Ashurst No. ~~1~~ 1

SW
~~NE¼~~ NE¼ 30- 5S-24E TD 1247', 10" casing. Water not shut off (1928).
No evidence of structure. Log and notes from ABM files.

0	20	Brown clay
20	50	Gravel, water
50	450	Brown clay
450	465	Red sand, water
465	510	White lime
510	540	Lime and shale
540	620	Light gray sand, water (10,000bbls/day)
620	667	Lime and shale
667	717	Shale
717	757	Gray gravel
757	1197	Gray gravel
1197	1247	Brown shale

-----p-----p-----a-----u-----

5-2

Ashurst No. 1

Graham County, Arizona

SW
NE¼ NE¼ 30-5S-24E TD 1247', 10" casing. Water not shut off (1928)
No evidence of structure. Log and notes from ABM files.

0	20	Brown clay
20	50	Gravel, water
50	450	Brown clay
450	465	Red sand, water
465	510	White lime
510	540	Lime and shale
540	620	Light gray sand, water (10,000 bbls/day
620	667	Lime and shale
667	717	Shale
717	757	Gray gravel
757	1197	"
1197	1247	Brown shale

USGS - Canfield Report 5-1-28

- 4 -

The sodium sulphate mine, approximately in Section 6, T. 18 N., R. 5 E., G. & S. R. M., was also visited. The mine was shut down, but three prospect shafts were being sunk.

* * * * * * * * * * *

SAFFORD AND BOWIE AREAS: Graham Co.

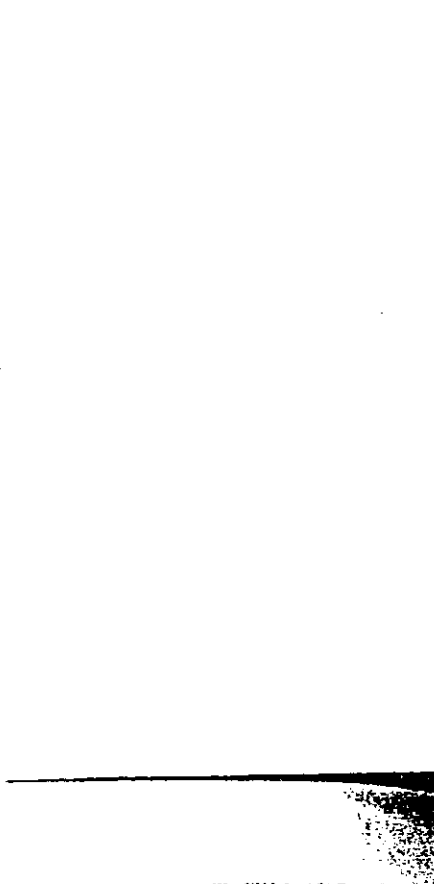
Ashurst No. 1. ~~NE¼ NE¼~~ SW NE¼ Section 30, T. 5 S., R. 24 E., G. & S. R. M. Drilling depth 1,247 feet carrying 10-inch casing. Water not shut off. No evidence of structure. Well visited April 16, 1928.

Log of Ashurst No. 1
(Furnished by Mr. Todd, Safford, Arizona.)

0 -	20	Brown clay
20 -	50	Gravel - water
50 -	450	Brown clay
450 -	465	Red sand - water
465 -	510	White lime
510 -	540	Lime and shale
540 -	620	Light gray sand - water (about 10,000 barrels per day)
620 -	667	Lime and shale
667 -	717	Shale
717 -	757	Gray gravel
757 -	1,197	Gray shale
1,197 -	1,247	Brown shale

* * * * * * * * * * *

ll (*d*, fig. 30) having its mouth at
ther from the intake area.
in the lake beds and the successful
been carried on over a period of
that artesian water is present in



of wells, 1934. (See wells 189–203, table following

ian Simon Valleys that are underlain
easy reach of drilling equipment.

HE DEEP SANDS

County is the 3,767-foot Mack wel
ar Pima. This well penetrated fi
feet, the deepest one at 3,530 fe
of the deeply buried sediments co
own, and no explanation of the occu
. It is possible that they are mar
an the lake beds.

A well that was abandoned before 1933 was drilled to a depth of 2,645 feet near Ashurst, in sec. 30, T. 5 S., R. 24 E., about 2¼ miles southwest of Indian Hot Springs. It is reported to have yielded strong artesian flows at depths of 430, 620, 1,515, 2,075, 2,210, and 2,405 feet below the surface. The water of the deeper flows was highly mineralized and hot. The relation of the hot water encountered in this well to that of

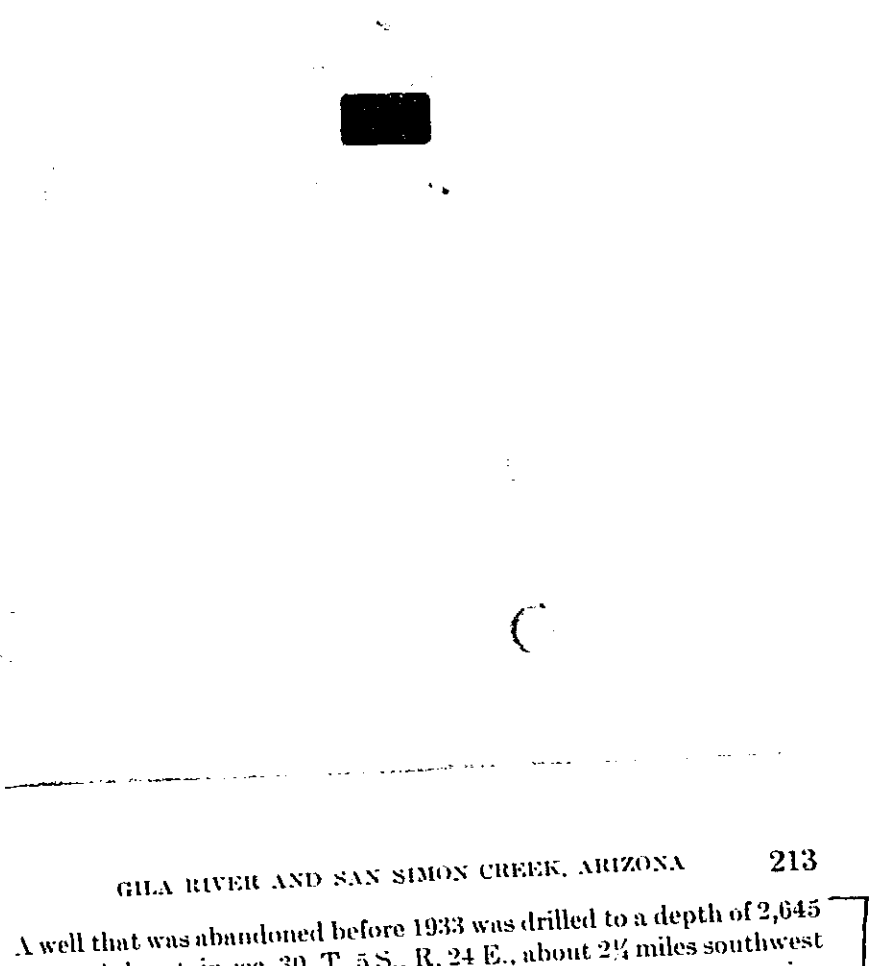


FIGURE 33.—Map of Thatcher, showing location of wells, 1934. (See wells 161–180, table following p. 222.)

Indian Hot Springs (pp. 216 and 217) is not known, but possibly the deep water-bearing beds are the same in both places. In February 1934 a well was being drilled by E. G. Rogers in the NE¼ sec. 5, T. 6 S., R. 24 E., in the expectation of striking artesian flows of hot water comparable with those obtained at Indian Hot Springs and the Mack well and formerly at the Ashurst well.

The Southern Pacific Co.'s well at Safford, at the place where the elevated water tank stood in 1934, was drilled in 1906–7 to a depth of 1,820 feet. (See log, p. 202.) This well is reported to have flowed warm

USGS WSP 796-F, 1938

Plate 46, WSP 796-F, 1938

file 5-2

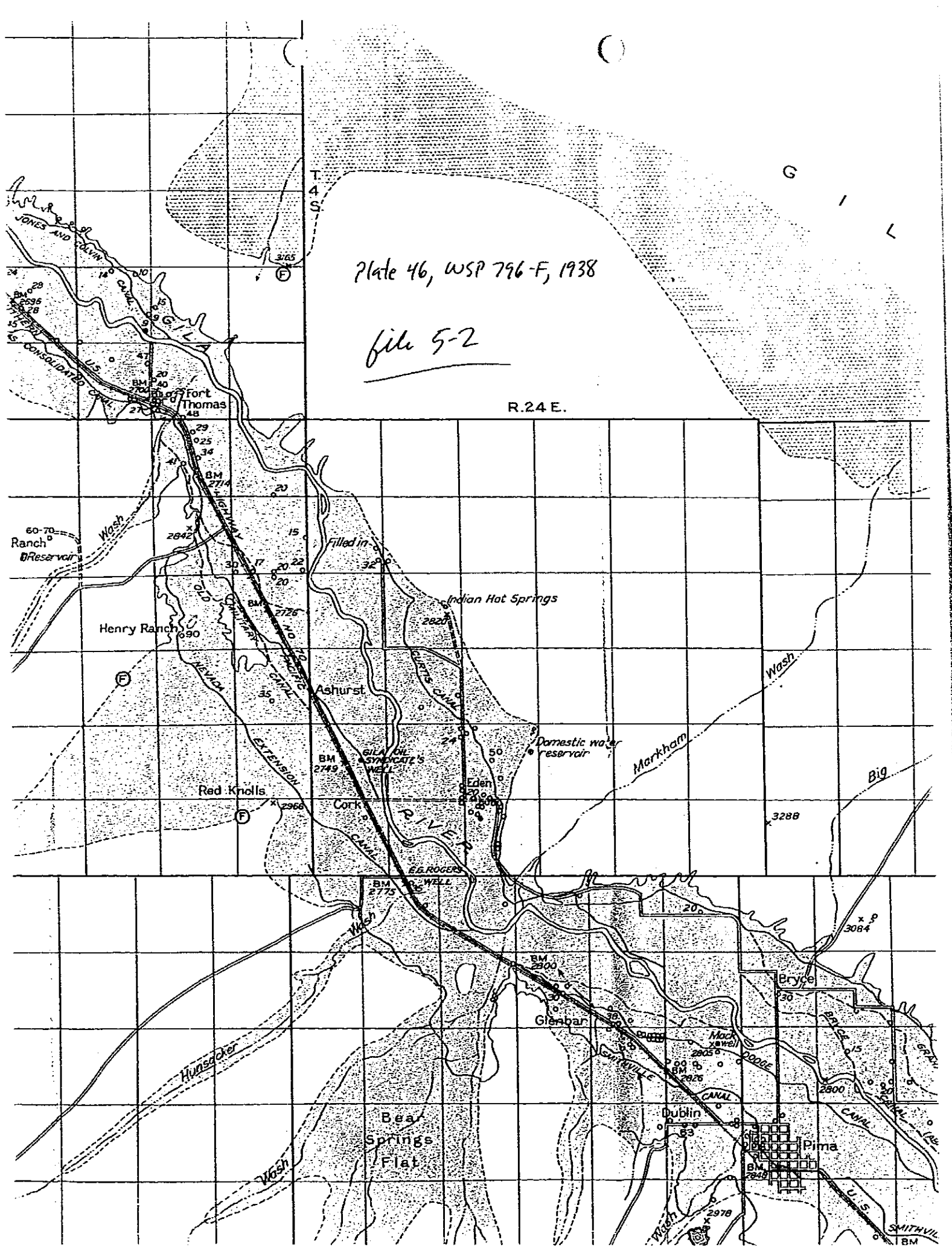
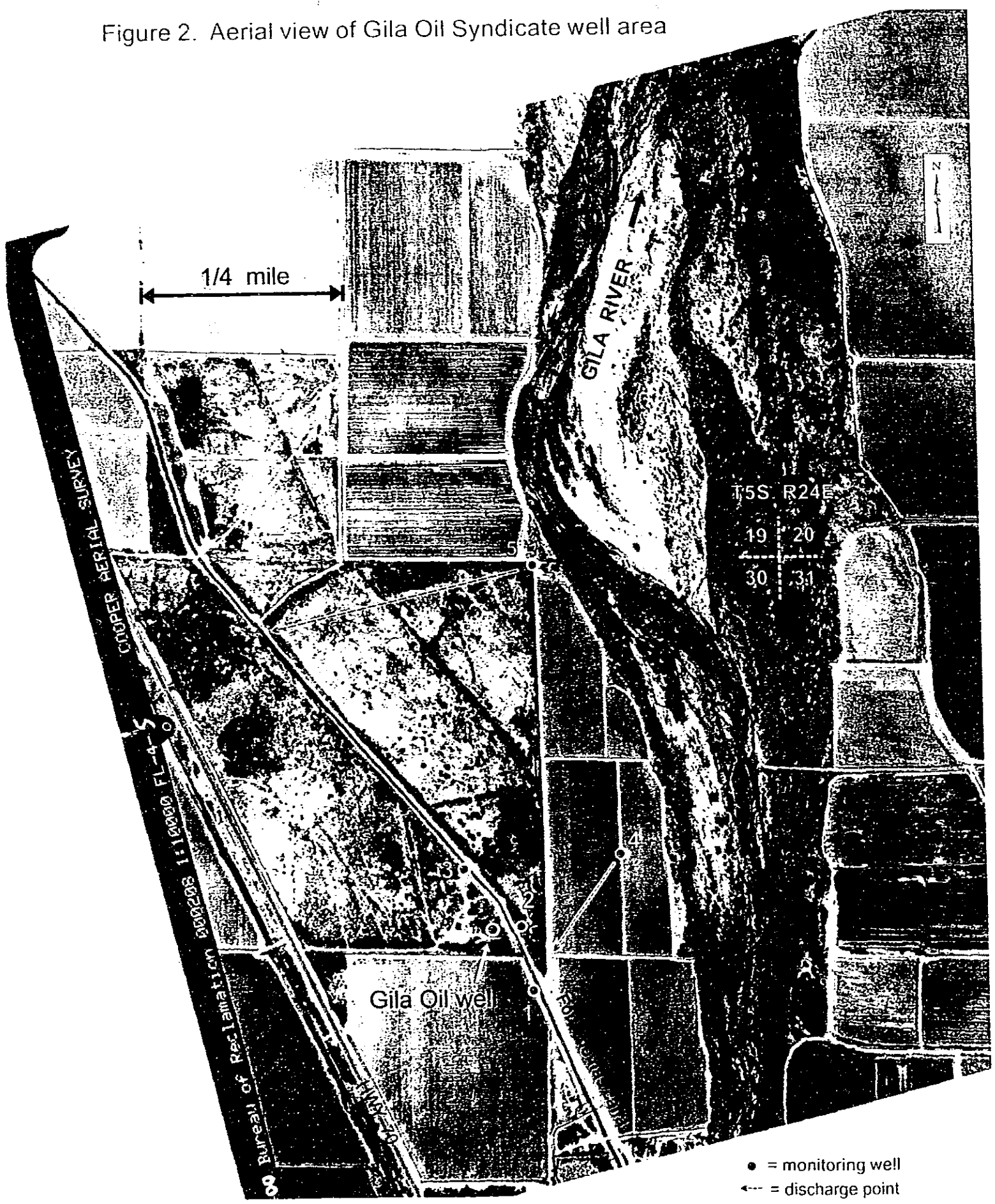
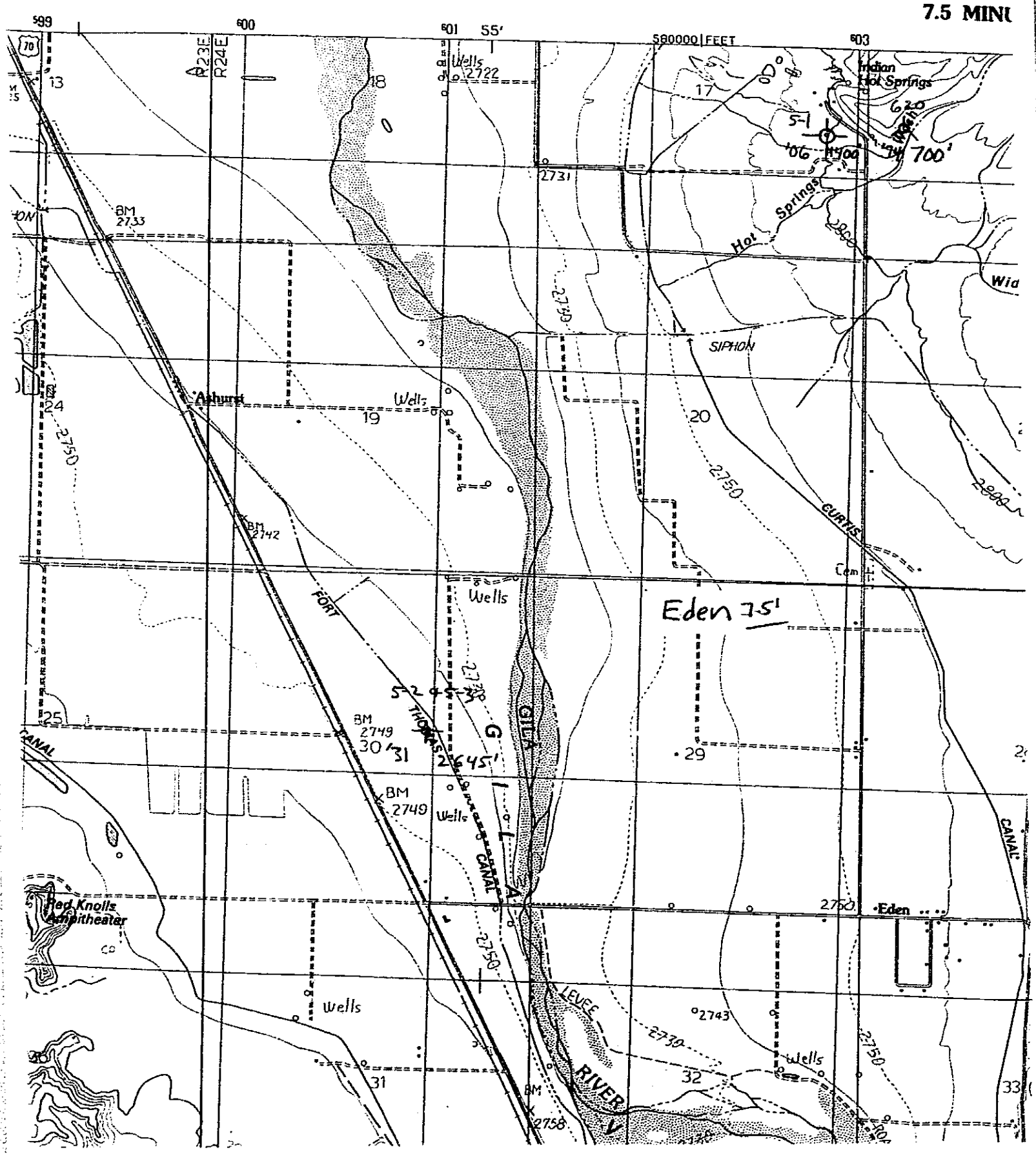


Figure 2. Aerial view of Gila Oil Syndicate well area



Al
7.5 MINU


599
600
601
55'
580000 FEET
603
R23E
R24E
Wells
2722
18
17
13
Indian Hot Springs
625
700'
S-1
H400
2731
BM
2733
Hot Springs
SIPHON
Wid
Ashurst
Wells
19
20
24
2750
2999
CURTIS
BM
2742
FORT
Wells
Eden 7.5'
2738
25
BM
2749
30
31
THOMAS
2645'
GILA
CANAL
29
Red Knolls Amphitheater
2750
Eden
Wells
LEVEE
2743
2739
RIVER
32
33
BM
2758

BOND NO. _____

AMOUNT _____

CANCELLED _____

ORGANIZATION REPORT _____

No Permit

WORK PLAN

FOR

ABANDONMENT OF GILA OIL SYNDICATE WELL #1
WPF 0245

August 2000

The Arizona Water Protection Fund has funded this project. The views or findings presented in this report are the Grantees and do not necessarily represent those of the Water Protection Fund Commission or the Arizona Department of Water Resources.

INTRODUCTION

The Gila Oil Syndicate Well #1 is located in Graham County Arizona not far from the town of Ft. Thomas. It was originally known as the Ashurst Well. This well along with a whole series of wells was drilled in the early 1900's to explore for oil. It unfortunately did not find oil, but did intersect an artesian aquifer of salty water. Well #1 is the saltiest of all the known saline wells. Analysis of the water from the well shows total dissolved solids (TDS) to exceed 19,000 milligrams/liter. Driller's log notes suggest that the flow noted at the surface today is only a fraction of the total well discharge.

Once the drilling was completed, the drilled holes were left open and the artesian water flowed freely in many of the wells. Once this water rises past its confining layers and into the permeable alluvium near the discharge point, the salty water migrates down-gradient toward the Gila River in the alluvial aquifer. The flow of this water causes nearby shallow irrigation wells to have their water quality deteriorated and it eventually reaches the Gila River where its effect is also noticed.

The work planned for the closure of the Gila Syndicate Oil Well #1 is discussed in the following narrative.

SITE PREPARATION

In mid- August rock will start being hauled into the site and stockpiled in preparation for filling the flooded area around the well collar. There are currently several clusters of honeybee hives in close proximity to the well site. These hives will be moved for the safety of the workers. In late September, a trench will be dug from the flooded area to the Ft. Thomas canal bank so that the overflow and standing water from the well can be drained. Once the area is dry enough for access, the trees, which are non-native salt cedars, and the old power poles will be removed to provide a clear work area around the well head. The excess casing from the well will be removed to allow the rig to have entry to the hole. A diversion pipe will be set on the well to keep the water overflow from flooding the area again. The rock that has been hauled to the site will be placed around the well head to bring the ground to a level condition and provide a firm foundation for the drilling process.

Before abandonment can start, an 'Application To Abandon' must be submitted to the Arizona Oil and Gas Commission for approval. Once approval is obtained, the drilling company will be notified.

UPPER WELL CLEANING

At this point which should be early October, the drill rig will come in and set up over the well head. The rig will run drill tools down the hole to the first encounter of "wooden" material to determine the open depth. Removal of wood will start. The process of locating obstructions and their removal will continue until the depth of 1247 feet is reached. The rig will run appropriately sized clean out tools to the 1247 level to completely clean out the hole.

OBSERVATION/SAMPLING
At this point the rig will run a video camera down the hole to determine the condition of the well and the casing. If appropriate for the hole condition, a spinner log instrument will be run down the hole at this point to determine if there are any in-flowing aquifers in this interval. If there are aquifers, these will be sampled using the packer isolation or other appropriate method. Samples will be submitted for standard analyses to the appropriate lab.

LOWER WELL CLEANOUT
The rig will again enter the hole with clean out tools and attempt to clean the well from 1247 to 2645 feet.

OBSERVATION/SAMPLING
Another video inspection and spinner log of the well will be made once this part of the hole is cleaned out. Knowing the depths of in-flowing aquifers will allow the rig to place inflatable plugs and sample the water from these inflows.

WELL PLUGGING
After the well is cleaned out as much as possible, the old well casing will be perforated as determined from the video inspections to allow the grout to be completely placed on the outside of the casing. The rig will run a tremie line down the hole to the bottom of the well and grout will be pumped under pressure into the hole from the bottom up to the surface. The grout will be a mixture of cement and bentonite with other possible additives to be determined by the condition of the hole. It will be mixed according to ASTM STD as required in the Oil and Gas Commission Abandonment Regulations (see attached). Standard QA/QC will be used with one sample taken from each batch of cement. Appropriate tests will be done to calibrate the cement quality. The grout will be forced to the outside of the casing and will fill any cracks or voids between the outside of the casing and the solid rock side of the hole. As the grouting process continues, the tremie line is raised in the well and the inside of the casing is then also filled with grout. In this way a solid cement plug is placed in the borehole.

MONITOR WELL SAMPLING
During the time that the well is being cleaned out and readied for plugging, the other wells in the area of the Gila Well will be sampled to determine background levels of the constituents before the well is plugged. This data will be used to monitor the reaction of the groundwater in the area of the well as time passes and the effects of the plugging become evident.

SITE RECLAMATION
When the hole is plugged, the rig will leave and all trash and refuse will be collected and removed. All mud pits will be filled and drainpipes will be removed. The site will be reclaimed to a normal and safe condition.

DRILLING REPORT

The drilling contractor will submit daily shift reports and a detailed report explaining their findings during the clean out process and the results of the plugging process. This report along with photo documentation will be prepared for inclusion in the final report. A report of findings from the video observation and the spinner logging will also be received from the subcontractor.

DISTRICT WELL CLASSIFICATION

Since additional wells similar to the Gila Well exist in the valley, plans are being considered to plug more of these wells to help improve water quality in the river. Once the results of the sampling program have been received and interpreted, the committee will meet to discuss the process for ranking the other wells in the district. As part of this process the most negative sampling results will be evaluated against the monitor wells in order to determine a method of detection which can be used for other district wells. A proposed method for ranking will be developed and then taken to the current well owners and the public for input and suggestions. The actual ranking plan will not be developed until after public input, but will probably include issues such as water quality, distance from the river, natural attenuation, all current well uses, historical and present effects down gradient from wells, condition of well bore holes and casing, a sampling and data collection plan, identification and location of all wells, background research, and others. It is expected that a group of volunteers will be organized to collect data on as many wells as possible. This data will be evaluated by the group, with scientific input from the AZ Geological Survey and others, and used to rank the wells.

Log of Well No. 2

0	-	250	Clay and white rock (Red Wall Lime)
250	-	800	Alternating layers of clay (25'-30' thick) and sodium rock (10'-15' thick)
800	-	1400	Clay and lava rocks
1400	-	1625	Igneous rocks

Water encountered at 1,000 feet and analysed. 33% sodium.

The sodium sulphate mine, approximately in Section 6, T. 13 N., R. 5 N., G. & S.R.M., was also visited. The mine was shut down, but three prospect shafts were being sunk.

SAFFORD AND BOWIE AREAS:

5-2 Ashurst No. 1. NE¼ NE¼ Section 30, T. 5 S., R. 24 E., G. & S.R.M. Drilling depth 1,247 feet carrying 10-inch casing. Water not shut off. No evidence of structure. Well visited April 16, 1928.

Log of Ashurst No. 1

0	-	20	Brown clay
20	-	50	Gravel - water
50	-	450	Brown clay
450	-	465	Red sand - water
465	-	510	White lime
510	-	540	Lime and shale
540	-	620	Light gray sand - water (about 10,000 barrels per day)
620	-	667	Lime and shale
667	-	717	Shale
717	-	757	Gray gravel
757	-	1,197	Gray shale
1,197	-	1,247	Brown shale

Underwriters' Syndicate No. 1. Located in the southeast corner of the NW¼ NE¼ Section 13, T. 6 S., R. 24 E., G. & S.R.M. Operations temporarily suspended at 3,103 feet. Drilling commenced October 7, 1927. Well visited April 16, 1928. No evidence of structure. 5-5

Condensed Log of Well.

0	-	80	Gravel
80	-	760	Red bed - (Cavey shale)
760	-	930	Salt
930	-	1,460	Red beds (shale)
1,460	-	1,463	Sand - showing oil
1,463	-	1,560	Red bed - sand
1,560	-	2,450	Water sand
2,450	-	2,930	Red sandy shale
2,930	-	3,100	Red bed (shale)
3,100	-	3,105	Red sand

Casing Record

24" - 30 feet; 20" - 80 feet; 12½" - 680 feet; 10" - 1,950 feet landed.

Ashurst No. 1

Graham County, Arizona

SW
NE¼ NE¼ 30-5S-24E TD 1247', 10" casing. Water not shut off (1928)
No evidence of structure. Log and notes from ABM files.

0	20	Brown clay
20	50	Gravel, water
50	450	Brown clay
450	465	Red sand, water
465	510	White lime
510	540	Lime and shale
540	620	Light gray sand, water (10,000 bbls/day
620	667	Lime and shale
667	717	Shale
717	757	Gray gravel
757	1197	"
1197	1247	Brown shale

Ashurst No. 1

Graham County, Arizona

SW
~~NE~~ $NE\frac{1}{4}$ $NE\frac{1}{4}$ 30-5S-24E TD 1247', 10" casing. Water not shut off (1928)
No evidence of structure. Log and notes from ABM files.

0	20	Brown clay
20	50	Gravel, water
50	450	Brown clay
450	465	Red sand, water
465	510	White lime
510	540	Lime and shale
540	620	Light gray sand, water (10,000 bbls/day
620	667	Lime and shale
667	717	Shale
717	757	Gray gravel
757	1197	"
1197	1247	Brown shale